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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,646	10/17/2003	Hiroshi Mizusawa	243373US3	9818
22850	7590	04/05/2006	EXAMINER CHEN, SOPHIA S	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			ART UNIT 2852	PAPER NUMBER

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/686,646		MIZUSAWA, HIROSHI	
	Examiner		Art Unit	
	Sophia S. Chen		2852	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5,8-14,16,17,20-33,35 and 36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,8-14,16,17,20-33,35 and 36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 4, 5, 8-14, 16, 17, 20- 24, 26-33, 35, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amemiya et al. (US Pat. Pub. No. US 2002/0106212 A1; cited in Form PTO-892 with Paper No. 20050216) in view of applicant's admitted fact (page 10, lines 21-24 of the specification) and Akiyama (US Pat. No. 4,956,677).

Amemiya et al. discloses an image forming apparatus, comprising: a cleaning apparatus 18/method comprising: a brush member (roller) 20 configured to contact and to remove toner particles from a member (a charge roller) 2; the brush member comprises a conductive member (paragraph [0024]) and a fiber material (nylon (emphasis added); paragraph [0036]); the brush member 20 is configured to be held by its own weight in contact with the member 2 and is configured to be driven by rotation of the member 2 (paragraph [0025]); the brush member 20 comprises a plurality of bristles, and a length of the bristles is not greater than 2 mm (paragraph [0031] and Figure 2); the brush member 20 also comprises a plurality of bristles20 including the conductive material, wherein the bristles 20 have a thickness of not greater than 5

deniers, and wherein a density of the bristles is at least 15000 bristles/cm² (paragraph [0033]); the member 2 comprises a charging device contacting the brush member 20, the brush member 20 configured to clean the charging device (paragraphs [0017] and [0024]); an image bearing body 1 contacting a blade member 11, the blade member 11 configured to clean the image bearing body 1 (paragraph [0020] and Figure 1); a transfer device 9 adapted to transfer an image to a recording sheet P (paragraph [0019] and Figure 1); and a removable process cartridge 14 comprising the cleaning apparatus 18 (paragraph [0021] and Figure 1).

Amemiya et al. differs from the instant claimed invention in not disclosing the brush member configured to remove negatively charged toner particles from the member; the fiber material that is positively chargeable when rubbed with the toner particles; the brush member has a resistance value between $1 \times 10^3 \Omega$ and $1 \times 10^8 \Omega$; and the conductive material comprises carbon.

On page 10, lines 21-24 of the specification, the applicant admits that nylon (emphasis added) being a member with positive charging series when the polarity of toner is negative.

Akiyama discloses a cleaning brush 13' being made of nylon or acrylic resin (column 2, lines 3-9; column 6, lines 44-49); containing carbon powder (column 6, lines 44-45); and having an electrical resistivity of about 10^1 to 10^4 megohms (column 8, lines 3-5).

Since the fiber material of Amemiya et al. is nylon that is capable of electrostatically (emphasis added) collecting toner (Amemiya et al., paragraph [0036]),

and the applicant admits that the nylon material is positively chargeable, it would have been obvious that the toner particles are negatively charged. Also, it would have been obvious that the negatively charged toner particles are attracted/removed by the brush member 20 (with positively chargeable nylon material) of Amemiya et al. when the brush member 20 slidably contacts the member (charging roller) 2.

Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the fiber material (rayon or nylon), resistance value, and carbon as taught by Akiyama to the fiber material (nylon) of Amemiya et al. in view of the applicant's admitted fact because of the same functionality for removing residual toner.

3. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Amemiya et al. in view of applicant's admitted fact and Akiyama as applied to claim 13 above, and further in view of Hiroshima et al. (EP 0 738 938 A1, cited in Form PTO-1449)

Amemiya et al. in view of applicant's admitted fact and Akiyama, as discussed above, differs from the instant claimed invention in not disclosing the brush member being configured to remove toner particles prepared by a polymerization method.

Hiroshima et al. discloses an image forming apparatus comprising a cleaning brush 13 configured to contact and to remove toner particles from a member 5 (column 23, line 57 to column 24, line 12; Figure 11); the brush member 13 comprising a conductive material (column 24, lines 11-12); the conductive material comprises carbon

(column 24, lines 14-16); and the brush member 13 is configured to remove toner particles prepared by a polymerization method (column 16, lines 11-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the polymerization method as taught by Hiroshima et al. to the toner particles of Amemiya et al. in view of applicant's admitted fact and Akiyama to improve transfer efficiency (Hiroshima et al., column 16, lines 11-20).

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Response to Arguments

5. Applicant's arguments filed 2/7/06 have been fully considered but they are not persuasive.

Applicant submits that a person of ordinary skill in the art would not have been motivated to combine the teachings of Amemiya with those of Akiyama to produce the brush recited in amended Claim 1. Akiyama requires sliding contact between the brush (13) and the photosensitive drum (1) (opposite rotating directions at the contact position) and discourages allowing the brush to be driven by the photosensitive drum. Conversely, Amemiya describes a brush which rests on top of a charging roller and rotates due only to the driving force of the charge roller. Also, Amemiya describes the brush does not contact the surface of the charge roller with an excessive force. Applicant submits that a person of ordinary skill in the art would not have looked to combine the independently driven the brush (13) described in Akiyama with the brush driven by the charge roller itself described in Amemiya. Moreover, Applicant submits that if the brush of Akiyama were used in combination with the apparatus of Amemiya, the result would not be the invention recited in amended Claim 1. Rather, because the principle of operation of the brush (13) described in Akiyama requires sliding contact with the photosensitive drum, the brush would rotate so as to slidably contact the member, thus controverting the "driven to rotate by rotation of the member" element of amended Claim 1.

The Examiner does not agree with above arguments. Akiyama does require sliding contact between the brush (13) and the photosensitive drum. Although the brush

(20) of Amemiya rotates due only to the driving force of the charge roller (2), Amemiya also requires **sliding contact** between the brush (20) and the member (2). Amemiya describes that the amount of bite could not be excessively small because the brush would fail to efficiently clean the surface of the charge roller (paragraphs [0025], [0028], and [0029]). Therefore, a person of ordinary skill in the art would have looked to combine the brush (13) described in Akiyama with the brush (13) described in Amemiya because they both sliding contact the member to be cleaned. Since the brush of Amemiya and the brush of Akiyama use the same material, nylon, it would have been obvious to one of ordinary skill in the art to apply the properties of nylon as described in Akiyama to the brush of Amemiya. Therefore, a person of ordinary skill in the art would have been motivated to combine the teachings of Amemiya with those of Akiyama to produce the brush recited in amended Claim 1.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sophia S. Chen whose telephone number is (571) 272-2133. The examiner can normally be reached on M-F (7:00-3:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on (571) 272-2136. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sophia S. Chen
Primary Examiner
Art Unit 2852

Ssc
April 2, 2006